Introduction to Information Systems
Essentials for the Internetworked E-Business Enterprise

Eleventh Edition

James A. O'Brien

11

C h a p t e r

Security and

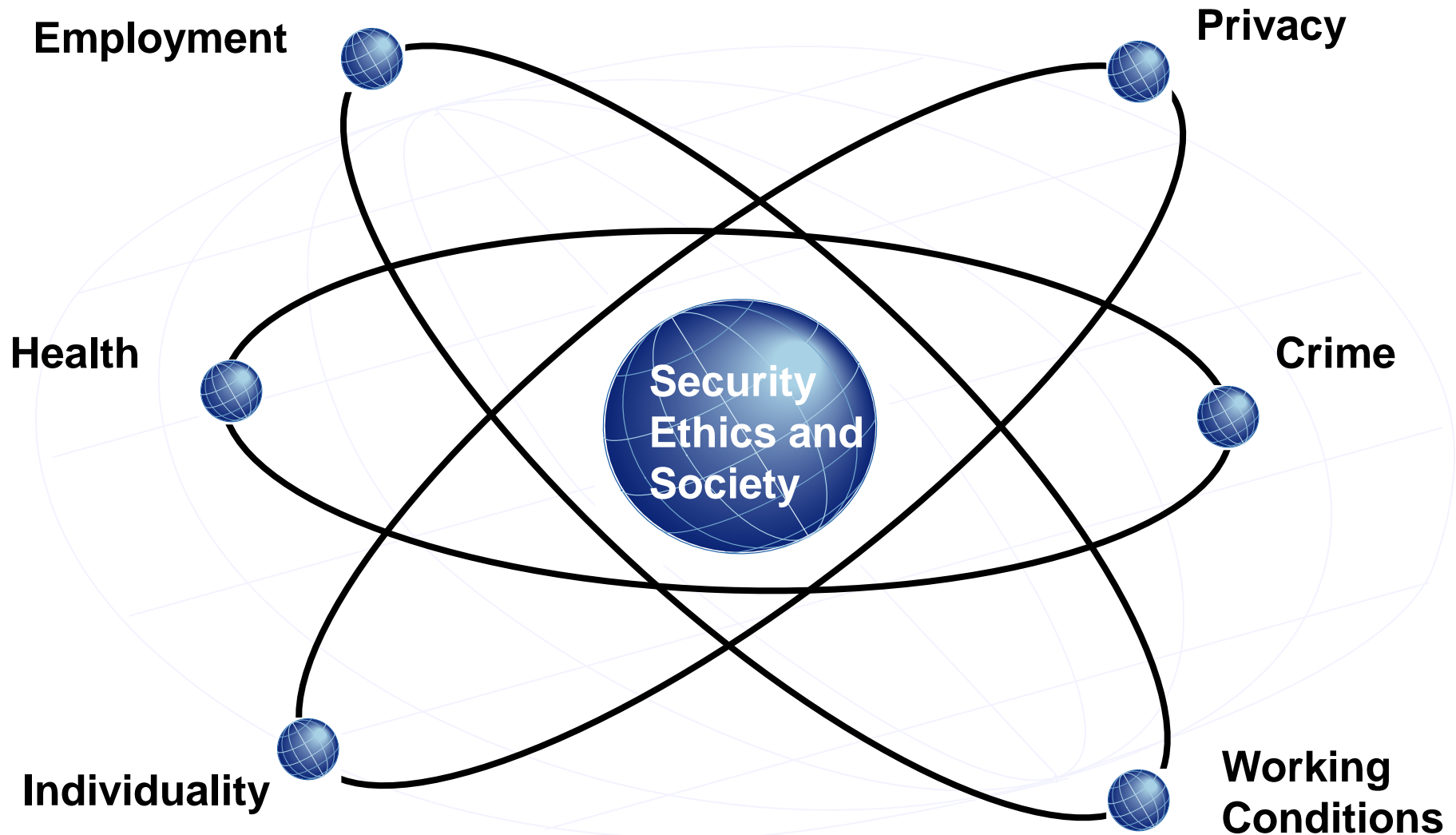# Ethical Challenges

# of e-Business

Chapter Objectives

- **Identify several ethical issues in how the use of information technologies in e-business affects employment, individuality, working conditions, privacy, crime, health, and solutions to societal problems.**

- **Identify several types of security management strategies and defenses, and explain how they can be used to ensure the security of e-business applications.**
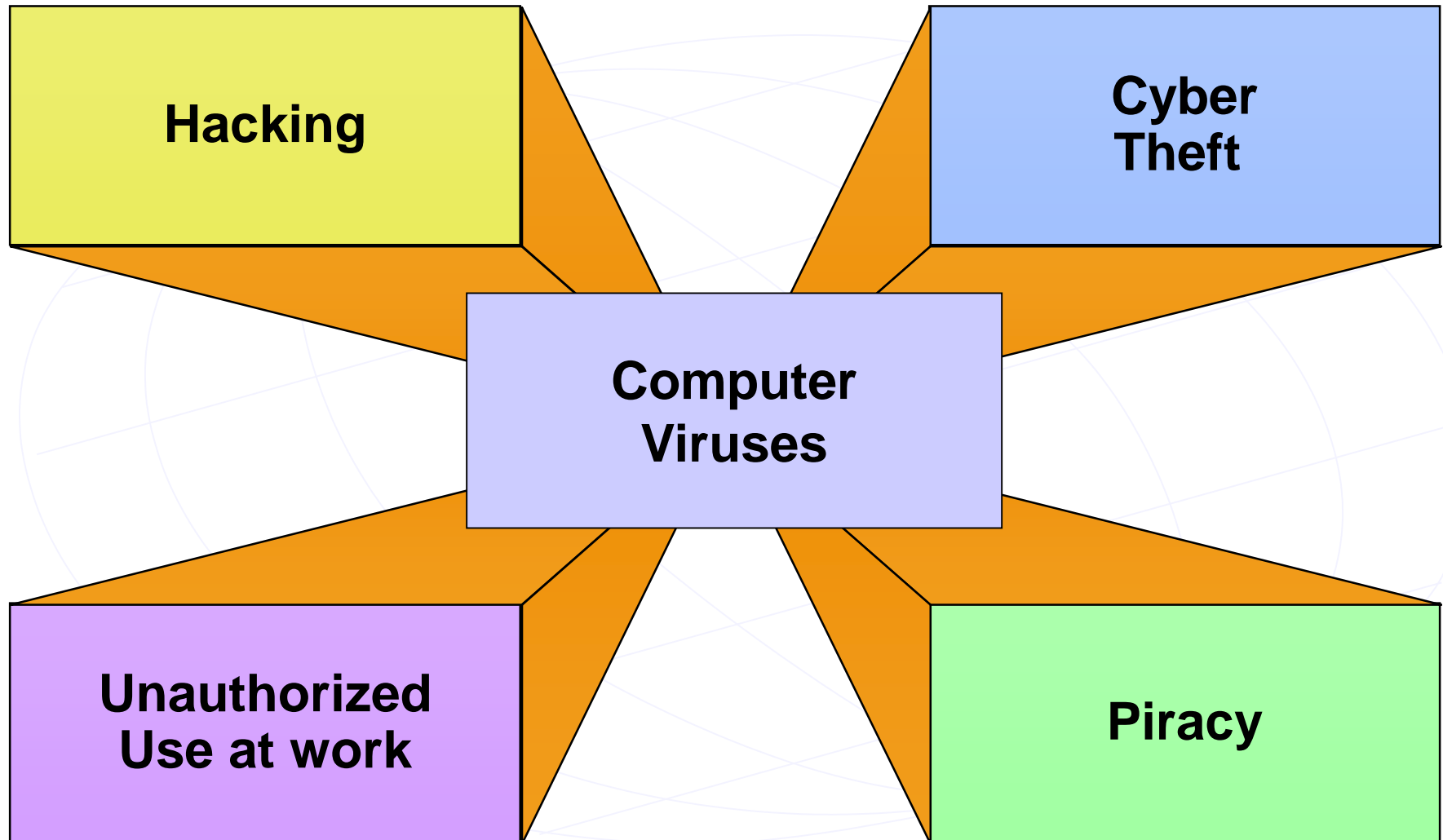
Chapter Objectives

- **Propose several ways that business managers and professionals can help to lessen the harmful effects and increase the beneficial effects of the use of information technology.**

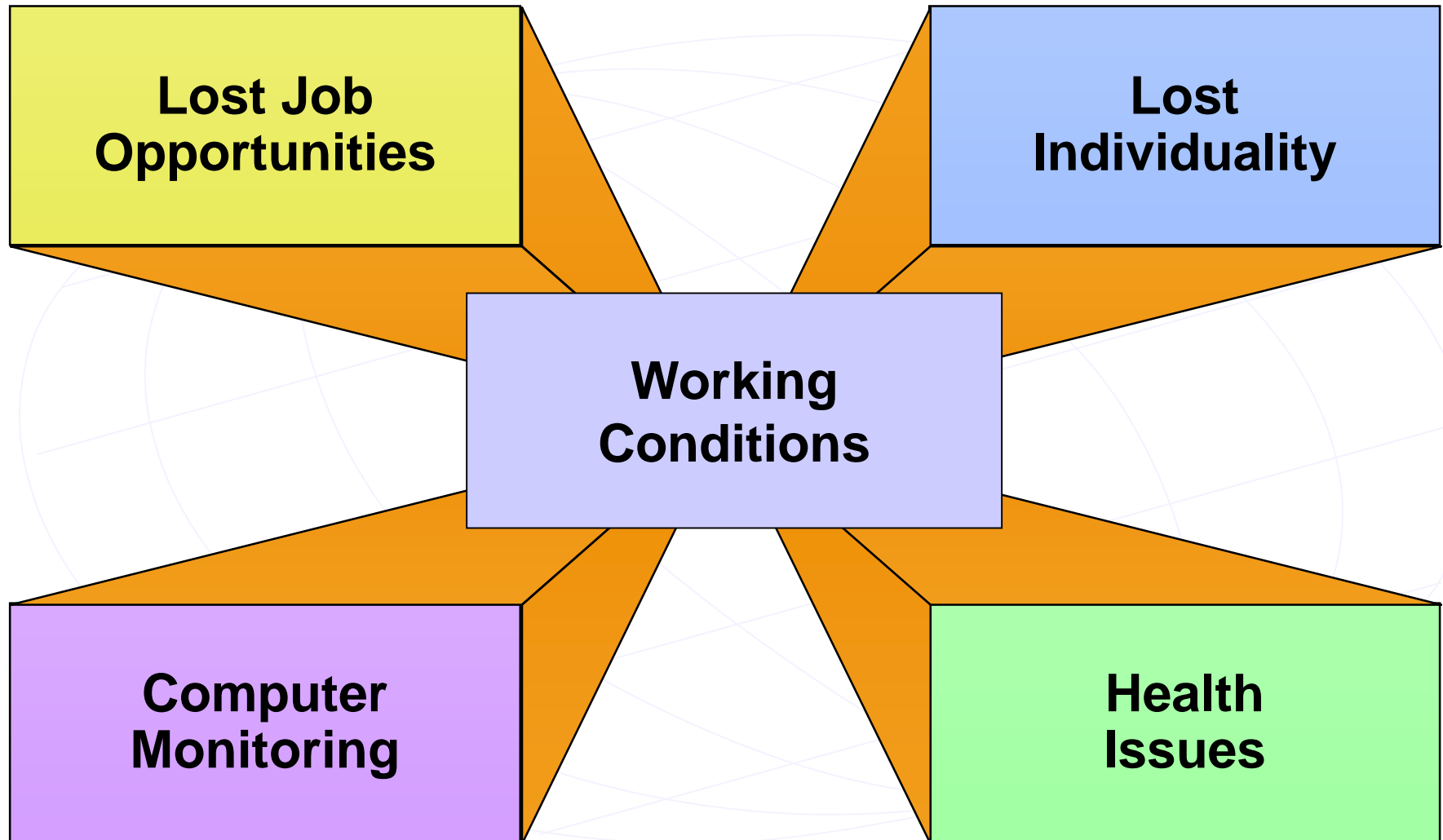# Security and Ethical Challenges

Employment

Privacy

Health

Crime

Individuality

Working Conditions

Security Ethics and Society

Computer Crime

Hacking

Cyber Theft

Computer Viruses

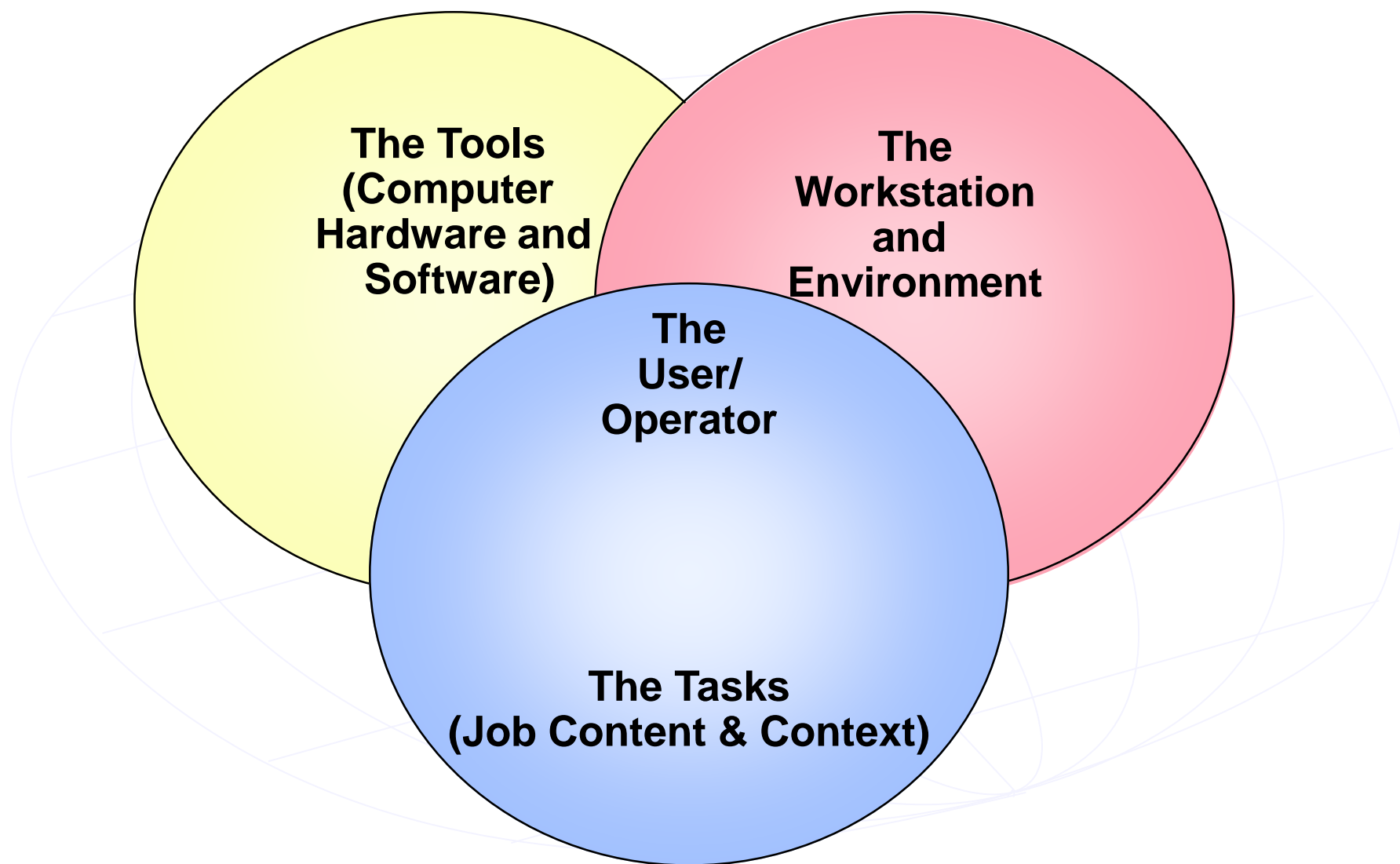**Unauthorized Use at work**

Piracy

Common Hacking Tactics

- Denial of Service
- Scans
- Sniffer Programs
- Spoofing
- Trojan Horse
- Back Doors
- Malicious Applets

- War Dialing
- Logic Bombs
- Buffer Overflow
- Password Crackers
- Social Engineering
- Dumpster Driving

Employment Challenges

Lost Job Opportunities

Lost Individuality

Working Conditions

Computer Monitoring

Health Issues

Ergonomic Factors in the Workplace

The Tools (Computer Hardware and Software)

The Workstation and Environment

The User/ Operator

The Tasks (Job Content & Context)
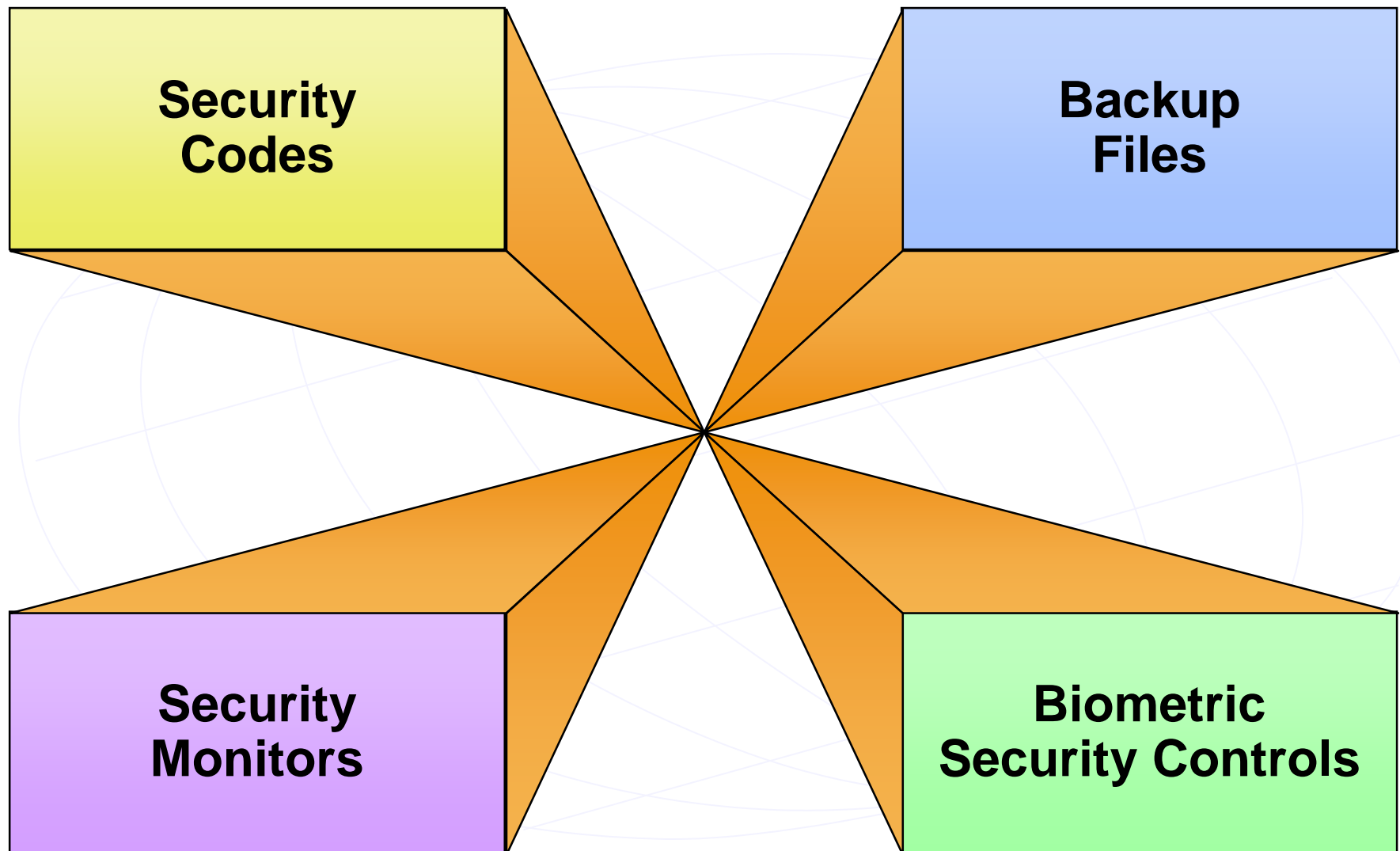
Ethical Considerations

- Ethical Principles
  - Proportionality
  - Informed Consent
  - Justice
  - Minimized Risk

- Standard of Conduct
  - Act with integrity
  - Protect the privacy and confidentiality of information
  - Do not misrepresent or withhold information
  - Do not misuse resources
  - Do not exploit weakness of systems
  - Set high standards
  - Advance the health and welfare of general public

Security Management of e-Business

Encryption

Fire Walls

Virus Defenses

Denial of Service Defenses

Monitor E-mail
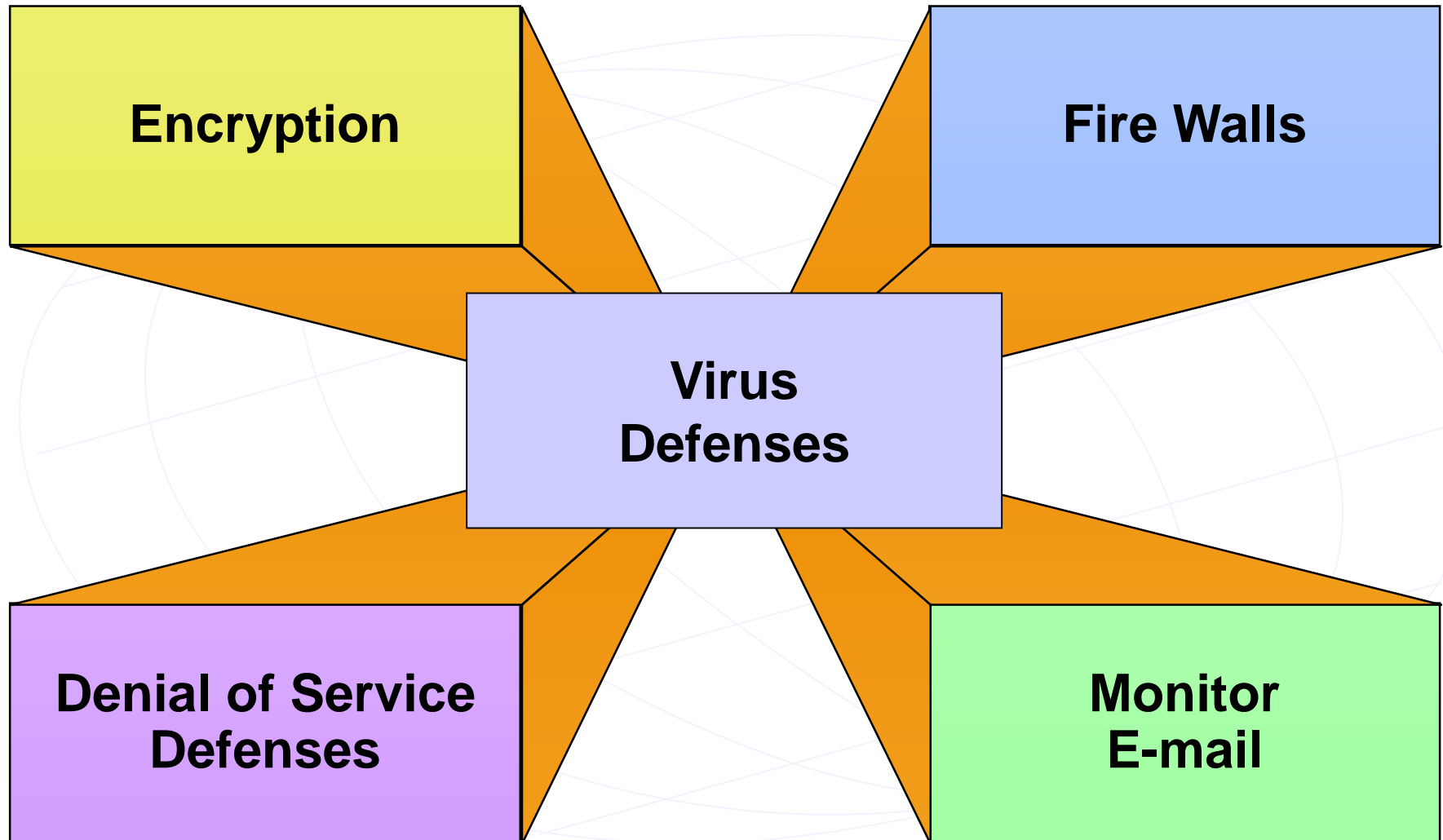
Other e-Business Security Measures

Security Codes

Backup Files

Security Monitors

Biometric Security Controls

Computer System Failure Controls

Fault Tolerant Systems		
Fail-Over	**Fail-Safe**	**Fail-Soft**

Layer	Threat	Fault Tolerant Methods
Applications	**Environmental, HW and SW Faults**	Application redundancy, Checkpoints
Systems	**Outages**	System isolation Data security
Databases	**Data errors**	Transaction histories, backup files
Networks	**Transmission errors**	Alternate routing, error correcting routines
Processes	**HW and SW faults**	Checkpoints
Files	**Media Errors**	Replication of data
Processors	**HW Faults**	Instruction retry

Disaster Recovery

- Who will participate?

- What will be their duties?

- What hardware and software will be used?

- Priority of applications to be run?

- What alternative facilities will be used?

- Where will databases be stored?

e-Business System Controls and Audits

Input Controls

Processing Controls

Fire walls
Software
Hardware
Checkpoints

Output Controls

Security Codes
Encryption
Error Signals

Storage Controls

Security Codes
Encryption
Backup Files

Security Codes
Encryption
Control Totals
User Feedback
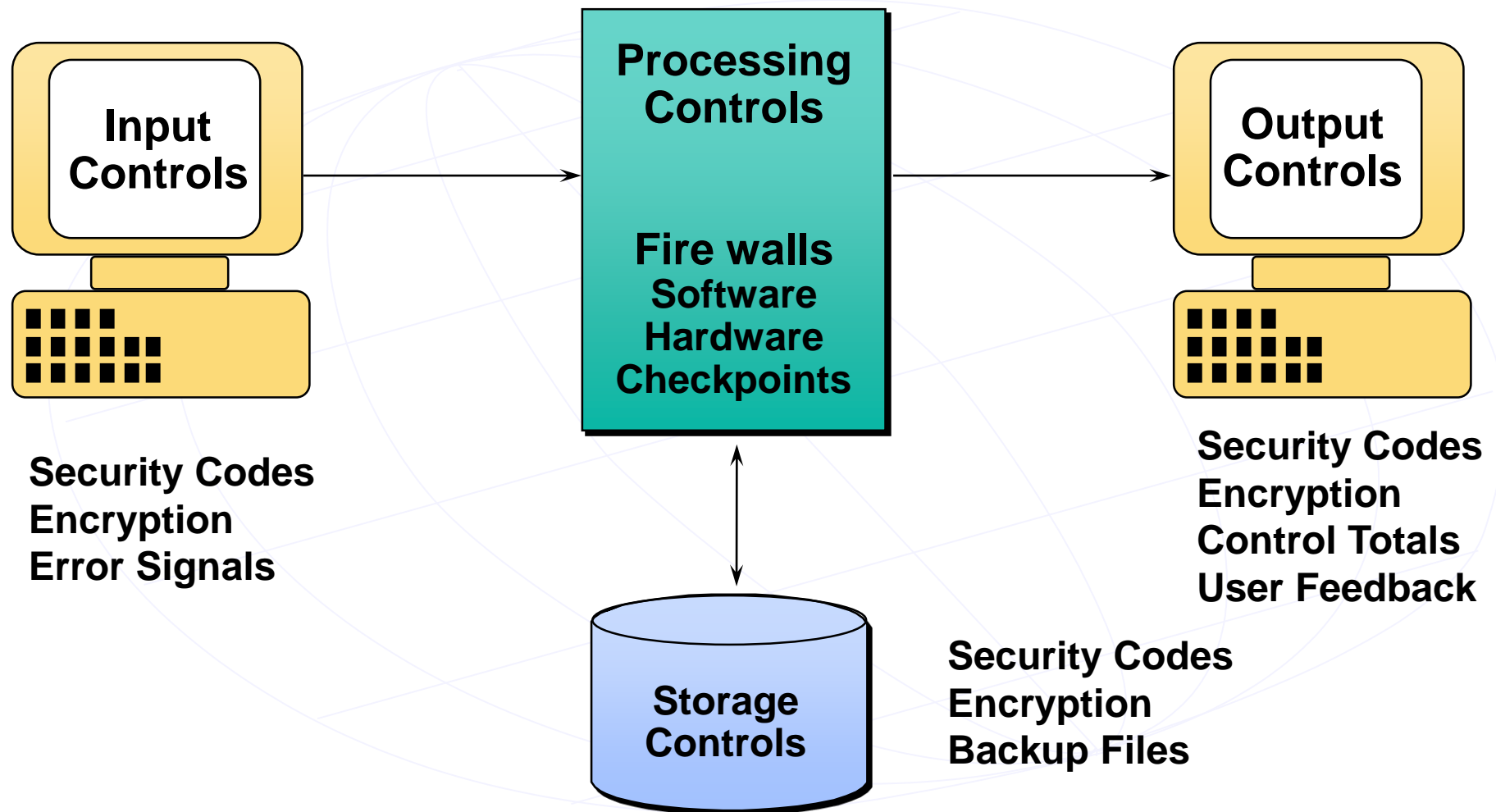
Chapter Summary

- **The vital role of e-bBusiness and e-commerce systems in society raises serious ethical and societal issues in terms of their impact on employment, individuality, working conditions, privacy, health, and computer crime.**

- **Managers can help solve the problems of improper use of IT by assuming their ethical responsibilities for ergonomic design, beneficial use, and enlightened management of e-business technologies in our society.**

Chapter Summary (cont)

- **Business and IT activities involve many ethical considerations. Ethical principles and standards of conduct can serve as guidelines for dealing with ethical businesses issues.**

- **One of the most important responsibilities of the management of a company is to assure the security and quality of its e-business activities.**

- **Security management tools and policies can ensure the accuracy, integrity, and safety of e-business systems and resources.**